

WHAT IS CLAIMED IS:

1                   1.       A method for increasing the efficacy of a therapeutic agent  
2 administered to a subject having an autoimmune condition, comprising co-administering  
3 to the subject an effective amount of a sleep restorative agent or a pharmacologically  
4 acceptable addition salt thereof, and a therapeutic agent;  
5                   whereby the efficacy of the therapeutic agent is increased.

1                   2.       The method of claim 1, wherein an undesired side effect associated  
2 with administration of the therapeutic agent is reduced.

1                   3.       The method of claim 1, wherein a symptom of the subject is  
2 reduced.

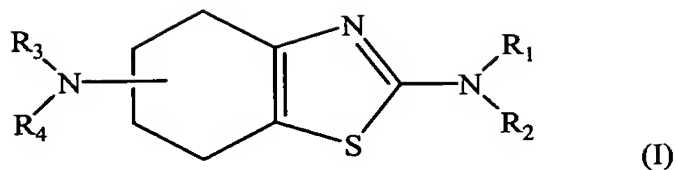
1                   4.       The method of claim 1, wherein administration of the sleep  
2 restorative agent spares the effective amount of the therapeutic agent.

1                   5.       The method of claim 1, wherein sleep quality of the subject is  
2 increased.

1                   6.       The method of claim 5, wherein increased sleep quality is  
2 manifested by restoration or prolongation of stage III/IV sleep, decreased sleep  
3 fragmentation or disruption, reduced sleep apnea, reduced restless legs syndrome,  
4 decreased restlessness, decreased racing thoughts, decreased talking in one's sleep or  
5 decreased nightmares.

1                   7.       The method of claim 1, wherein excessive sympathetic tone in the  
2 subject is reduced.

1                   8.       The method of claim 1, wherein the sleep restorative agent is a  
2 compound of the following formula:



wherein

R<sub>1</sub> represents a hydrogen atom, a C<sub>1-6</sub> alkyl group, a C<sub>3-6</sub> alkenyl, a C<sub>3-6</sub> alkynyl, a C<sub>1-6</sub> alkanoyl group, a phenyl C<sub>1-3</sub> alkyl group, or a phenyl C<sub>1-3</sub> alkanoyl group, wherein the phenyl nuclei may be substituted by 1 or 2 halogen atoms;

R<sub>2</sub> represents a hydrogen atom or a C<sub>1-4</sub> alkyl group;

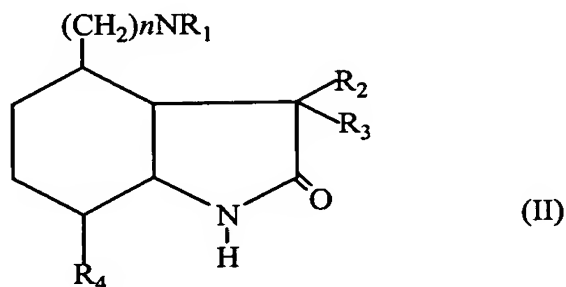
R<sub>3</sub> represents a hydrogen atom, a C<sub>1-7</sub> alkyl group, a C<sub>3-7</sub> cycloalkyl group, a C<sub>3-6</sub> alkenyl group, a C<sub>3-6</sub> alkynyl group, a C<sub>1-7</sub> alkanoyl group, a phenyl C<sub>1-3</sub> alkyl, or a phenyl C<sub>1-3</sub> alkanoyl group, wherein the phenyl nucleus may be substituted by fluorine, chlorine or bromine atoms;

R<sub>4</sub> represents a hydrogen atom, a C<sub>1-4</sub> alkyl group, a C<sub>3-6</sub> alkenyl group, or a C<sub>3-6</sub> alkynyl group; or

R<sub>3</sub> and R<sub>4</sub> together with the nitrogen atom between them represent a pyrrolidino, piperidino, hexamethyleneimino or morpholino group.

9. The method of claim 8, wherein the sleep restorative agent is 2-amino-4,5,6,7-tetrahydro-6-(propylamino)benzo-thiazole or the (-)-enantiomer thereof.

10. The method of claim 1, wherein the sleep restorative agent is a compound of the following formula:



3                    wherein  
4                    R<sub>1</sub> is hydrogen or a C<sub>1-4</sub> alkyl group;  
5                    R<sub>2</sub> and R<sub>3</sub> are each hydrogen or a C<sub>1-4</sub> alkyl group;  
6                    R<sub>4</sub> is hydrogen or hydroxy; and  
7                    n is 1 to 3.

1                    11.     The method of claim 10, wherein the sleep restorative agent is 4-[2-  
2 (dipropylamino)-ethyl]-1,3-dihydro-2H-indol-2-one.

1                    12.     The method of claim 1, wherein the sleep restorative agent is  
2 Lorazepam, Clonazepam, Tizanidine, Gabapentin, Zaleplon, Zolpidem, pregabalin, or  
3 pharmaceutically acceptable salts thereof.

1                    13.     The method of claim 1, wherein the therapeutic agent is soluble  
2 TNF $\alpha$  receptor, methotrexate, prednisone, an interferon, a cyclosporin, an ascomycin, a  
3 rapamycin, a corticosteroid, a cyclophosphamide, azathioprine, brequinar, leflunomide,  
4 mizoribine, deoxyspergualin, or immunosuppressive monoclonal antibodies to a leukocyte  
5 receptor.

1                    14.     The method of claim 13, wherein the soluble TNF $\alpha$  receptor is  
2 Etanercept or Lenercept.

1                    15.     The method of claim 1, wherein the sleep restorative agent and the  
2 therapeutic agent are administered in a unitary dosage form.

1                    16.     The method of claim 1, wherein the sleep restorative agent and the  
2 therapeutic agent are administered separately.

1                    17.     The method of claim 1, wherein the sleep restorative agent is  
2 administered as a dosage form of a tablet, capsule, lozenge, powder, solution, suspension,  
3 emulsion, injectable solution, syrup, suppository, or transdermal patch.

1                    18.     The method of claim 17, wherein the dosage form further comprises  
2 a pharmaceutically acceptable carrier.

1                    19.    The method of claim 1, wherein the therapeutic agent is an  
2 immunomodulatory agent.

1                    20.    A method for sparing an effective amount of a therapeutic agent  
2 administered to a subject having an autoimmune condition, comprising:  
3                    co-administering to the subject the therapeutic agent and an effective  
4 amount of a sleep restorative agent, the sleep restorative agent improving sleep quality of  
5 the subject;  
6                    whereby the sleep restorative agent spares the effective amount of the  
7 therapeutic agent.

1                    21.    The method of claim 20, wherein an undesired side effect associated  
2 with administration of the therapeutic agent is reduced.

1                    22.    The method of claim 20, wherein the autoimmune condition is  
2 rheumatoid arthritis; psoriatic arthritis; a spondyloarthropathy; palindromic rheumatism;  
3 systemic lupus erythematosus; vasculitis with systemic lupus erythematosus; multiple  
4 sclerosis; Hashimoto's thyroiditis; chronic pseudogout; hepatitis C arthritis, mixed  
5 connective tissue disease; dermatomyositis, polymyositis; scleroderma; Sjogren's  
6 syndrome; cryoglobulinemia; Crohn's disease; ulcerative colitis; autoimmune hepatitis;  
7 sclerosing cholangitis; primary biliary cirrhosis; autoimmune pneumonitis; autoimmune  
8 cerebritis; thyroiditis; graft versus host disease; Myasthenia gravis; pemphigus vulgaris;  
9 temporal arteritis; polymyalgia rheumatica; autoimmune hemolytic anemia; idiopathic  
10 thrombocytopenic purpura; thrombotic thrombocytopenic purpura; hemolytic uremic  
11 syndrome; Sweet's syndrome; polyarteritis nodosa; microscopic polyarteritis nodosa;  
12 amyloidosis; sarcoidosis; or familial Mediterranean fever.

1                    23.    The method of claim 22, wherein the spondyloarthropathy is  
2 Behcet's disease, Whipple's Disease, sarcoidosis, ankylosing spondylitis or Reiter's  
3 Syndrome.

1                    24.    A method for sparing an effective amount of a therapeutic agent  
2 administered to a subject having an autoimmune condition, comprising:

co-administering to the subject the therapeutic agent and an effective amount of a sleep restorative agent, the sleep restorative agent reducing excessive sympathetic tone of the subject;

whereby the sleep restorative agent spares the effective amount of the therapeutic agent.

25. A method for reducing a symptom in a subject in need of immunomodulatory therapy, comprising co-administering an effective amount of an immunomodulatory agent and an effective amount of a sleep restorative agent, the sleep restorative agent improving sleep quality of the subject;

whereby the sleep restorative agent spares the effective amount of the immunomodulatory agent needed to reduce the symptom.

26. The method of claim 25, wherein the immunomodulatory agent is soluble TNF $\alpha$  receptor, prednisone, methotrexate, an interferon, a cyclosporin, an ascomycin, a rapamycin, a corticosteroid, a cyclophosphamide, azathioprine, brequinar, leflunomide, mizoribine, deoxyspergualin, or immunosuppressive monoclonal antibodies to a leukocyte receptor.

27. The method of claim 26, wherein the immunomodulatory agent is soluble TNF $\alpha$  receptor.

28. The method of claim 25, wherein the subject has a sleep disorder.

29. The method of claim 25, wherein a side effect associated with administration of the therapeutic agent is reduced.

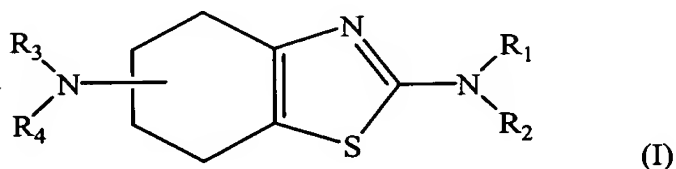
30. A composition for administration to a subject having an autoimmune disease, comprising:  
an effective amount of a sleep restorative agent; and  
and an effective amount of a therapeutic agent;  
the effective amount of the therapeutic agent spared by the sleep restorative agent.

1                    31.    The composition of claim 30, wherein the composition is a unitary  
2    dose.

1                    32.    The composition of claim 30, wherein the composition is  
2    administered as a tablet, capsule, lozenge, powder, solution, suspension, emulsion,  
3    injectable solution, syrup, suppository, or transdermal patch.

1                    33.    The composition of claim 30, wherein the composition further  
2    comprises a pharmaceutically acceptable carrier, an excipient or an adjuvant.

1                    34.    The composition of claim 30, wherein the sleep restorative agent is  
2    a compound of the following formula:



3  
4                    wherein

5                    R<sub>1</sub> represents a hydrogen atom, a C<sub>1-6</sub> alkyl group, a C<sub>3-6</sub> alkenyl, a C<sub>3-6</sub>  
6    alkynyl, a C<sub>1-6</sub> alkanoyl group, a phenyl C<sub>1-3</sub> alkyl group, or a phenyl C<sub>1-3</sub> alkanoyl  
7    group, wherein the phenyl nuclei may be substituted by 1 or 2 halogen atoms;

8                    R<sub>2</sub> represents a hydrogen atom or a C<sub>1-4</sub> alkyl group;

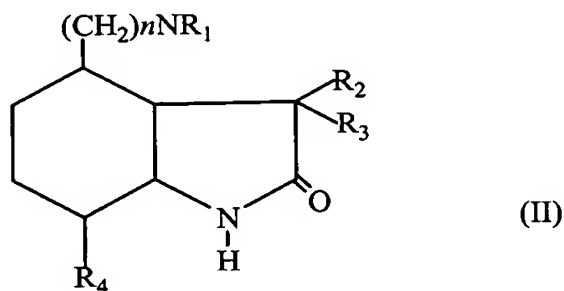
9                    R<sub>3</sub> represents a hydrogen atom, a C<sub>1-7</sub> alkyl group, a C<sub>3-7</sub> cycloalkyl group,  
10    a C<sub>3-6</sub> alkenyl group, a C<sub>3-6</sub> alkynyl group, a C<sub>1-7</sub> alkanoyl group, a phenyl C<sub>1-3</sub> alkyl, or  
11    a phenyl C<sub>1-3</sub> alkanoyl group, wherein the phenyl nucleus may be substituted by fluorine,  
12    chlorine or bromine atoms;

13                    R<sub>4</sub> represents a hydrogen atom, a C<sub>1-4</sub> alkyl group, a C<sub>3-6</sub> alkenyl group, or  
14    a C<sub>3-6</sub> alkynyl group; or

15                    R<sub>3</sub> and R<sub>4</sub> together with the nitrogen atom between them represent a  
16    pyrrolidino, piperidino, hexamethyleneimino or morpholino group.

1                    35.    The method of claim 34, wherein, wherein the sleep restorative  
2 agent is 2-amino-4,5,6,7-tetrahydro-6-(propylamino)benzo-thiazole or the (-)-enantiomer  
3 thereof.

1                    36.    The method of claim 30, wherein the sleep restorative agent is a  
2 compound of the following formula:



3  
4                    wherein

5                    R<sub>1</sub> is hydrogen or a C<sub>1-4</sub> alkyl group;

6                    R<sub>2</sub> and R<sub>3</sub> are each hydrogen or a C<sub>1-4</sub> alkyl group;

7                    R<sub>4</sub> is hydrogen or hydroxy; and

8                    n is 1 to 3.

1                    37.    The method of claim 36, wherein the sleep restorative agent is 4-[2-  
2 (dipropylamino)-ethyl]-1,3-dihydro-2H-indol-2-one.

1                    38.    The method of claim 30, wherein the sleep restorative agent is  
2 Lorazepam, Clonazepam, Tizanidine, Gabapentin, Zaleplon, Zolpidem, or  
3 pharmaceutically acceptable salts thereof.

1                    39.    The method of claim 30, wherein the therapeutic agent is soluble  
2 TNF $\alpha$  receptor, methotrexate, prednisone, an interferon, a cyclosporin, an ascomycin, a  
3 rapamycin, a corticosteroid, a cyclophosphamide, azathioprine, brequinar, leflunomide,  
4 mizoribine, deoxyspergualin, or immunosuppressive monoclonal antibodies to a leukocyte  
5 receptor.